

[ Title of Document]	Application for Patent
[ Reference Number]	97314300
[ Date of Filing]	January 26, 1998
[ To]	Commissioner, Patent Office
[ International Patent Code]	H04N 1/00 107
[ International Patent Code]	H04L 12/54
[ International Patent Code]	H04L 12/58
[ International Patent Code]	G06F 13/00 351
[ Title of the Invention]	Internet Facsimile Device
[ Number of Claims]	013
[ Inventor]	
[ Address or Residence]	c/o BROTHER KOGYO KABUSHIKI KAISHA No. 15-1, Naeshiro-cho, Mizuho-ku, Nagoya-shi, Aichi-ken, Japan
[ Name]	Wataru TOMITA
[ Applicant]	
[ Identification Number]	000005267
[ Name]	BROTHER KOGYO KABUSHIKI KAISHA
[ Agent of the Applicant]	
[ Classification of Agent]	Agent
[ Identification Number]	100104514
[ Patent Attorney]	
[ Name]	Yasuhiko MORI
[ Telephone Number]	0532-52-1801
[ Agent of the Applicant]	
[ Classification of Agent]	Agent

[ Identification Number]	100097168	
[ Patent Attorney]		
[ Name]	Kazuhiro SUGIHARA	
[ Telephone Number]	0532-52-1801	
[ Designation of Charge]		
[ Ledger No. for Prepayment]	038896	
[ Amount of Payment]	*	
[ Lists of Document Attached]		
[ Title of Document]	Specification	01
[ Title of Document]	Drawings	01
[ Title of Document]	Abstract	01
[ Registration Number of General Power of Attorney]	9709538	

[ Document Name] Specification

[ Title of the Invention] Internet Facsimile Device

[ Claims]

[ Claim 1] An internet facsimile device

5 comprising:

destination specifying means for specifying an  
electronic mail address of a destination;

original document reading means for reading image data  
from an original document;

10 electronic-mail-format image data forming means for  
forming image data in an electronic mail format based on the  
image data read by the original document reading means; and

internet facsimile transmitting means for transmitting  
the image data in the electronic mail format via an internet  
15 as an electronic mail addressed to the specified electronic  
mail address,

the internet facsimile device being characterized by  
further comprising title inputting means for inputting a  
title relating to the image data in the electronic mail  
20 format, wherein

the internet facsimile transmitting means includes  
title attaching means for attaching the title inputted by  
the title inputting means as an electronic mail title to the  
image data in the electronic mail format and transmitting  
25 the same to the destination.

[ Claim 2]        An internet facsimile device comprising:  
destination specifying means for specifying one of a  
telephone number and an electronic mail address as a  
destination;

5            original document reading means for reading image data  
from an original document;

             facsimile data forming means for forming image data in  
a facsimile format based on the image data read by the  
original document reading means;

10           electronic-mail-format image data forming means for  
forming image data in an electronic mail format based on the  
image data read by the original document reading means;

             public network facsimile transmitting means for  
transmitting the image data in the facsimile format formed  
15 by the facsimile data forming means via a public network to  
the specified telephone number when the telephone number was  
specified as the destination by the destination specifying  
means; and

             internet facsimile transmitting means for transmitting  
20 the image data in the electronic mail format formed by the  
electronic-mail-format image data forming means via an  
internet as an electronic mail addressed to the specified  
electronic mail address when the electronic mail address was  
specified by the destination specifying means,

25           the internet facsimile device being characterized by

further comprising title inputting means for inputting a title relating to the image data in the electronic mail format when the electronic mail address was specified by the destination specifying means, wherein

5           the internet facsimile transmitting means includes title attaching means for attaching the title inputted by the title inputting means to the image data in the electronic mail format as an electronic mail title and transmitting the same to the destination.

10           [Claim 3]       The internet facsimile device according to claim 2, wherein the electronic-mail-format image data forming means includes format converting means for converting the image data in the facsimile format formed by the facsimile data forming means into an image data in the  
15       electronic mail format.

          [Claim 4]       The internet facsimile device according to one of claims 1 to 3, further comprising title input prompting means for prompting a user to input a title through the title inputting means before the internet  
20       facsimile transmitting means starts transmission.

          [Claim 5]       The internet facsimile device according to one of claims 1 to 4, wherein

          the title inputting means includes:

          title registering means for registering a plurality of  
25       titles in advance; and

title selecting means for selecting a title to be attached to the image data in the electronic mail format from the plurality of titles registered in the title registering means.

5           [Claim 6]       The internet facsimile device according to claim 5, further comprising title editing means for adding a title to, modifying a title in, and deleting a title from the title registering means.

10           [Claim 7]       The internet facsimile device according to one of claims 1 to 6, further comprising:

default title registering means for registering a default title as a default condition of a title to be attached to the image data in the electronic mail format; and

15           default title setting means for setting the default title registered in the default title registering means as the electronic mail title when transmission is preformed by the internet facsimile transmitting means if a title was not input through the title inputting means.

20           [Claim 8]       The internet facsimile device according to one of claims 1 to 3, wherein the title inputting means includes:

character recognition means for recognizing character data from the image data which was read from a predetermined region of the original document by the original document

25

reading means; and

automatic title setting means for setting the character data which was recognized by the character recognition means as the electronic mail title.

5 [Claim 9] An internet facsimile device comprising:

internet facsimile receiving means for receiving image data in an electronic mail format attached with an electronic mail title as a facsimile via an internet; and

10 facsimile outputting means for outputting a facsimile based on the image data in the electronic mail format received by the internet facsimile receiving means,

the internet facsimile device being characterized by further comprising:

15 title reading means for reading the electronic mail title attached to the image data in the electronic mail format received by the internet facsimile receiving means;

title displaying means for displaying the electronic mail title which was read by the title reading means; and

20 output data selecting means for selecting data which should be outputted by the facsimile outputting means from electronic mail titles displayed by the title displaying means.

[Claim 10] The internet facsimile device according to claim 9, further comprising:

25 public network facsimile receiving means for receiving

image data in the facsimile format via a public network; and  
reverse converting means for converting the image data  
received by the internet facsimile receiving means from the  
electronic mail format back into the facsimile format,  
5 wherein

the facsimile outputting means is means for outputting  
a facsimile based on image data in the facsimile format, and

the image data received by the internet facsimile  
receiving means is outputted as a facsimile based on image  
10 data in the facsimile format which was obtained by the  
reverse converting means converting the format.

[Claim 11] The internet facsimile device according  
to one of claims 9 and 10, further comprising:

priority determining means for determining priority of  
15 data to be outputted by the facsimile outputting means by  
recognizing contents of the electronic mail title read by  
the title reading means, and

notifying means for notifying a user when the priority  
is determined high as a result of determination by the  
20 priority determining means.

[Claim 12] The internet facsimile device according  
to claim 9 or 10, further comprising:

title reading means for reading the electronic mail  
title which is attached to the image data in the electronic  
25 mail format received by the internet facsimile receiving



means, and

priority outputting means for recognizing the contents of the electronic mail title read by the title reading means, determining a priority of data to be outputted by the facsimile outputting means, and controlling the facsimile outputting means to output by priority a data determined to be output by priority.

[ Claim 13] The internet facsimile device according to claim 12, further comprising notifying means for notifying a user when the priority outputting means has determined that data should be outputted by priority and when the data was output by priority.

[ Detailed Description of the Invention]

[ 0001]

[ Field of the Invention]

The present invention relates to an internet facsimile device capable of transmitting and receiving a facsimile via the internet (hereafter, in the description and the drawings, "facsimile" will be referred to as "Fax" or "FAX").

[ 0002]

[ Related Art]

Due to the expanded use of the internet in recent years, there are proposed internet facsimile devices that can transmit and receive a facsimile via the internet (For example, Japanese Patent-Application Publication Nos. HEI-8-

242326, HEI-9-149189).

[ 0003]

For example, according to the internet facsimile device proposed in Japanese Patent-Application Publication No. HEI-8-242326, an original document is read by an image scanner, and image data in a facsimile format is stored. Subsequently, the image data is converted to image data in a electronic mail format and transmitted along with a header via the internet. The header includes a destination address, a source address, and information on its data format and conversion method in which the e-mail data is converted to a character code. On a receiving party side, image data converted from the electronic mail format back to the facsimile format is printed.

[ 0004]

[Problems to be solved by the Invention]

In these conventional internet facsimile devices, a receiving party side can know a sending party of the facsimile. However, the receiving party side cannot know what type of facsimile has been received, for example, whether or not it is in urgent.

[ 0005]

It is a first objective of the present invention to enable an internet facsimile device at a receiving party side to determine the content of the outline and urgency of

the facsimile.

[ 0006]

Also, it is a second objective to make function useful on attaining the above first objective.

5 [ 0007]

Also, it is a third objective to simplify operations performed by a transmitting party on attaining the above first objective.

[ 0008]

10 In addition, it is a fourth objective to enable the receiving party side to immediately output an urgent facsimile.

[ 0009]

[Means for Solving the Problems]

15 An internet facsimile device for attaining the first objective includes destination specifying means for specifying an electronic mail address of a destination, original document reading means for reading image data from an original document, electronic-mail-format image data  
20 forming means for forming image data in an electronic mail format based on the image data read by the original document reading means, and internet facsimile transmitting means for transmitting the image data in the electronic mail format via an internet as an electronic mail addressed to the  
25 specified electronic mail address, the internet facsimile

device being characterized by further including title inputting means for inputting a title relating to the image data in the electronic mail format, wherein the internet facsimile transmitting means includes title attaching means for attaching the title inputted by the title inputting means as an electronic mail title to the image data in the electronic mail format and transmitting the same to the destination.

[ 0010]

According to the internet facsimile device of claim 1, a transmission party of a facsimile specifies an electronic mail address of a destination by the destination specifying means, and inputs a title notifying the receiving party of the contents of the facsimile, urgency, and the like through the title inputting means. Then, the transmission party sets and reads an original document on the original document reading means. Image data in the electronic mail format is formed by the electronic-mail-format image data forming means, and transmitted via the internet as the electronic mail addressed to the specified destination by the internet facsimile transmitting means. At this time, because the internet facsimile transmitting means includes the title inputting means, the title inputted by the title inputting means is attached as the electronic mail title and transmitted to a mailbox of the electronic mail address

specified as the destination.

[ 0011]

As the result, the receiving side that received the facsimile via the internet can understand the contents of the facsimile, urgency and the like, by reading the title of the electronic mail, immediately output if necessity, and confirm the contents by making a viewer to display on a display. It is especially useful when a plurality of facsimile has been received because reading priority can be given. The title inputting means of the device of the present invention can be one that simplifies operation as described later or one that is configured to directly input a desired comment through keys of a panel provided to a main body of the device.

[ 0012]

An invention of claim 2 for attaining the above first objective includes destination specifying means for specifying one of a telephone number and an electronic mail address as a destination, original document reading means for reading image data from an original document, facsimile data forming means for forming image data in a facsimile format based on the image data read by the original document reading means, electronic-mail-format image data forming means for forming image data in an electronic mail format based on the image data read by the original document

reading means, public network facsimile transmitting means  
for transmitting the image data in the facsimile format  
formed by the facsimile data forming means via a public  
network to a specified telephone number when the telephone  
5 number was specified as the destination by the destination  
specifying means, and internet facsimile transmitting means  
for transmitting the image data in the electronic mail  
format formed by the electronic-mail-format image data  
forming means via an internet as an electronic mail  
10 addressed to the specified electronic mail address when the  
electronic mail address was specified by the destination  
specifying means, the internet facsimile device being  
characterized by further including title inputting means for  
inputting a title relating to the image data in the  
15 electronic mail format when the electronic mail address was  
specified by the destination specifying means, wherein the  
internet facsimile transmitting means includes title  
attaching means for attaching the title inputted by the  
title inputting means to the image data in the electronic  
20 mail format as an electronic mail title and transmitting the  
same to the destination.

[ 0013]

The device of claim 2 can carry out facsimile  
transmission both via the public network by a telephone  
25 number and via the internet by an electronic mail address.

If the facsimile transmission is performed via the public network by specifying a telephone number, an original document is read, and image data in the facsimile format, for example, G3 compressed data is transmitted as a facsimile over the public network. On the other hand, if an electronic mail address is specified, an original document is set on the original document reading means and read, and also a title to be attached as the electronic mail title is input through the title inputting means. Then, the image data read by the original document reading means is converted to image data in the electronic mail format, for example, TIFF compressed format image data, and transmitted via the internet with the electronic mail title attached thereto. As the result, the receiving party can confirm the outline of contents or urgency of the facsimile information transmitted to a mail server via the internet before performing subsequent processing, since the electronic mail title is displayed. Thus, the first objective of the present invention is attained when transmitting a facsimile via the public network and when transmitting a facsimile via the internet by adding a procedure to input a title when transmitting a facsimile via the internet.

[ 0014]

As mentioned in claim 3, in the internet facsimile device according to claim 2, the electronic-mail-format

image data forming means includes format converting means for converting the image data in the facsimile format formed by the facsimile data forming means into an image data in the electronic mail format.

5 [ 0015]

According to the internet facsimile device of claim 3, when the facsimile is transmitted via the internet, the image data read by the original document reading means is converted once to image data in the facsimile format by the facsimile data forming means. Then, the image data in the facsimile format is converted to image data in the electronic mail format by the electronic-mail-format image data forming means and transmitted via the internet by the internet facsimile transmitting means as an electronic mail to the specified destination. According to the device of claim 3, if the public network is busy when attempting facsimile transmission over the public network, it is changed to facsimile transmission via the internet. In this case, by storing the image data in the facsimile format in a buffer, the image data can be read and converted in its format. Therefore, it is unnecessary to read the original document again.

[ 0016]

The invention of claim 4 for attaining the second objective also is the internet facsimile device according to



one of claims 1 to 3, further including title input prompting means for prompting a user to input a title through the title inputting means before the internet facsimile transmitting means starts transmission.

5 [ 0017]

The title input prompting means could be, for example, means for prompting the user to input a title before transmission when a transmission party attempts to perform transmission only by inputting an address and reading an original document, or means for prompting the user to input a title by preventing the user from inputting a transmission start command unless a title is input through the title inputting means.

[ 0018]

15 According to the internet facsimile device of claim 4, the title input prompting means is provided. Therefore, the function of the device of claim 1 to transmit a facsimile with an electronic mail title attached thereto is not wasted, and the first objective can be attained effectively.

20 [ 0019]

The invention of claim 5 for attaining the above third objective is the internet facsimile device according to one of claims 1 to 4, wherein the title inputting means includes title registering means for registering a plurality title in advance, and title selecting means for selecting a title to

be attached to the image data in the electronic mail format from the plurality of titles registered in the title registering means.

[ 0020]

5           According to the device of claim 5, the transmitting party can easily input a title by selecting a title from the plural titles pre-registered in the title registering means through the title selecting means. For example, it is desirable to register titles such as "ASAP!", "please call  
10 me when you read", and "confidential" in the title registering means which are often used in cover pages when normal facsimile transmission.

[ 0021]

15           The invention of claim 6 for attaining the third objective is the internet facsimile device according to claim 5, further including title editing means for adding a title to, modifying a title in, and deleting a title from the title registering means.

[ 0022]

20           According to the device of claim 6, a title can be added, modified, or deleted by using the title editing means. Therefore, titles from which the user selects a title can be changed as user wishes, and the device can meet the needs of the user.

25           [ 0023]

The invention of claim 7 for more effectively attaining the second objective is the internet facsimile device according to one of claims 1 to 6, further including default title registering means for registering a default title as a default condition of a title to be attached to the image data in the electronic mail format, and default title setting means for setting the default title registered in the default title registering means as the electronic mail title when transmission is preformed by the internet facsimile transmitting means if a title was not input through the title inputting means.

[ 0024]

According to the device of claim 7, if the transmitting party forgets to input a title by the title inputting means, or the transmitting party ignores the instruction from the title input prompting means of the device and tries to perform a facsimile transmission via the internet, then the default title setting means reads a default title as the default condition from the default title registering means and automatically sets the same as an electronic mail title. As a default title, it is desirable to set comments such as "This is internet facsimile." or "Please prompt facsimile output." to distinguish from usual electronic mails.

[ 0025]

The invention of claim 8 for attaining the second and third objectives is the internet facsimile device according to one of claims 1 to 3, wherein the title inputting means includes character recognition means for recognizing character data from the image data which was read from a predetermined region of the original document by the original document reading means, and automatic title setting means for setting the character data which was recognized by the character recognition means as the electronic mail title.

[ 0026]

According to the device of claim 8, the title is automatically set from a read original document even if the transmitting party does not input a title. Therefore, the first objective is attained reliably, and its function is not wasted, and the operation can be simplified. More specifically, for example, a region in a first page of the original document where the double sized characters are printed is recognized as character data using a usual character recognition method such as an OCR and the like. Then the character data can be attached as the electronic mail title. Alternatively, character sequence surrounded with a frame or underlined character sequence on a first page of a facsimile original may be recognized as a title using the OCR or the like.

[ 0027]

The invention of claim 9 for attaining the above fourth objective is including internet facsimile receiving means for receiving image data in an electronic mail format attached with an electronic mail title as a facsimile via an internet, and facsimile outputting means for outputting a facsimile based on the image data in the electronic mail format received by the internet facsimile receiving means, the internet facsimile device being characterized by further comprising: title reading means for reading the electronic mail title which is attached to the image data in the electronic mail format received by the internet facsimile receiving means, title displaying means for displaying the electronic mail title which was read by the title reading means, and output data selecting means for selecting data which should be outputted by the facsimile outputting means from electronic mail titles displayed by the title displaying means.

[ 0028]

According to the device of claim 9, as indicated in one of claims 1 to 8, when the facsimile data attached with the electronic mail title is received via the internet, the title reading means reads the electronic mail title attached to the image data in the electronic mail format received by the receiving means, and the title displaying means displays the electronic mail title. The receiving party can know the

contents of the facsimile received via the internet or can determine whether or not the facsimile has to be read immediately, by reading the title. Then, if the receiving party determines to read the contents, the data to be output  
5 is selected by the outputting data selecting means and can be output by the facsimile outputting means. Note that the facsimile outputting means could be configured by a printer function to print on a recording sheet or a viewer function to display on a display.

10 [ 0029]

The internet facsimile device according to claim 9 could, as the invention of claim 10, further include public network facsimile receiving means for receiving image data in the facsimile format via a public network, and reverse  
15 converting means for converting the image data received by the internet facsimile receiving means from the electronic mail format back into the facsimile format, wherein the facsimile outputting means is means for outputting a facsimile based on image data in the facsimile format, and  
20 the image data received by the internet facsimile receiving means is outputted as a facsimile based on image data in the facsimile format which was obtained by the reverse converting means converting the format.

[ 0030]

25 According to the internet facsimile device of claim 10,

a facsimile can be received not only via the internet but also over the public network. The device includes the function to convert image data in the electronic mail format received via the internet back into the image data in the facsimile format by the reverse format converting means when data received by a facsimile is output on a recording sheet. Therefore, the facsimile outputting means can be used both for facsimile data received via the public network and for facsimile data received over the internet.

[ 0031]

In attaining the fourth objective, like the invention of claim 11, the internet facsimile device according to claim 9 or 10, preferably includes priority determining means for determining priority of data to be outputted by the facsimile outputting means by recognizing contents of the electronic mail title read by the title reading means, and notifying means for notifying a user when the priority is determined high as a result of determination by the priority determining means.

[ 0032]

According to the device of claim 11, if it is determined, as a result of recognition of the contents of electronic mail and determination of priority by the priority determining means, that a facsimile needed to be read immediately was received, then the notifying means

notifies the user of the fact. For example, for determining the priority, a dictionary for determining priority based on a character sequence in the title could be provided on the device at the receiving party side. The dictionary may  
5 determine that a title including a character sequence, such as "hurry!", to have high priority. It is conceivable to notify a user by generating buzzer sound. A user may be notified in various ways, when the title displaying means displays titles. For example, the title of the electronic  
10 mail which was determined to have high priority may be changed in its color, blink, displayed on the top of a list, or the like.

[ 0033]

In order to attain the fourth objective, as claim 12,  
15 the internet facsimile device according to claim 9 or 10 may further include title reading means for reading the electronic mail title which is attached to the image data in the electronic mail format received by the internet facsimile receiving means, and priority outputting means for  
20 recognizing the contents of the electronic mail title read by the title reading means, determining a priority of data to be outputted by the facsimile outputting means, and controlling the facsimile outputting means to output by priority a data determined to be output by priority.

25 [ 0034]



According to the device of claim 12, because the priority outputting means is provided, the priority is determined based on the contents of the electronic mail title read by the title reading means when the facsimile is received via the internet as the electronic mail and if the data is determined to be output by priority, the data can be output by priority by the facsimile outputting means. Therefore, a problem that facsimile information that has to be read by priority is not read by the receiving party for a long period of time can be prevented.

[ 0035]

As the device of claim 13, the internet facsimile device according to claim 12 preferably includes notifying means for notifying a user when the priority outputting means has determined that data should be outputted by priority and when the data was output by priority.

[ 0036]

According to the device of claim 13, the receiving party can be reliably notified that urgent facsimile information that was determined to be in urgent from the title and to have high priority was outputted. Therefore, a problem that the information outputted by priority is not read until too late can be prevented.

[ 0037]

[ Embodiment]

Next, embodiments of the present invention will be described in detail with reference to drawings. First, an over

all construction of a facsimile communication system

5 according to the present embodiment will be described. As

shown in Fig. 1, an internet facsimile device 1 as a

transmission terminal of the present embodiment is connected

via a local area network (LAN) 2 to an in-house personal

computer (PC) 3, a printer 4, a mail server 5, and a network

10 router 6. Also, in this embodiment, an internet facsimile

device 11 and a G3 facsimile device 21 serve as reception

terminals. The internet facsimile device 11 that is

reception terminal is connected via a LAN 12 to an in-house

personal computer 13, a printer 14, a mail server 15, and a

15 network router 16 in the same manner as the internet

facsimile device 1, and can transmit and receive facsimile

data via a public network 32. The internet facsimile device

1 and the internet facsimile device 11 can transmit and

receive facsimile data over an internet 31 via the network

20 routers 6 and 16 that are connected to the LAN 2 and 12,

respectively. Also, the G3 facsimile device 21 as the

reception terminal is connected over the public network 32

to the internet facsimile device 1. Note that the internet

facsimile device 11 has fundamentally the same configuration

25 as that of the internet facsimile device 1.

[ 0038]

Next, a configuration of the internet facsimile device 1 will be described with reference to a block diagram of Fig. 2. The internet facsimile device 1 mainly includes a CPU 41, a ROM 43, a RAM 45, a scanner 47, an encoder 49, a printer 51, a decoder 53, an operation panel 55, a LCD 57, a modem 59, a circuit controller 61, a PC interface 63, a mail controller 65, and a LAN controller 67. The internet facsimile device 1 is connected via the modem 59 and the circuit controller 61 to the public network 32 and is connected via the LAN controller 57 to the LAN 2.

[ 0039]

The CPU 41 executes an overall control of the device 1, and executes various control processes, such as transmission and reception of a facsimile, registration of destination addresses, registration of titles, and the like, according to control programs stored in the ROM 43. As shown in Fig. 3(A), the RAM 45 includes a work memory 45a for use in facsimile transmission and reception control, a transmission/reception data storage area 45b, a destination data storage area 45c, and a title storage area 45d. The scanner 47 is for reading an image from an original document at facsimile transmission. The encoder 49 is for encoding image data read by the scanner 47 into image data in a G3 compressed format that is a facsimile format. The decoder

53 is for decoding image data in a facsimile format. The printer 51 is for forming an image on a recording sheet based on image data decoded by the decoder 53. The operation panel 55 is for various input operations, such as registering destination addresses, specifying destinations, inputting or selecting titles, and the like. The LCD 57 is for displaying various messages, such as operational procedures and error messages. The LCD 57 also functions as a touch panel by displaying one-touch keys at such operations as registering addresses and other information on receiving parties.

[ 0040]

The modem 59 is for performing facsimile transmissions and receptions between the public network 32 via the circuit controller 61. The circuit controller 61 is for transmitting dial signals for the public network 32 and responding to call signals from the public network 32. The PC interface 63 is for connecting the device 1 with a PC.

[ 0041]

The mail controller 65 converts, when transmitting facsimile as an e-mail via the internet, binary image data encoded by the encoder 49 into text coded image data, image data in the facsimile format into image data in an e-mail format that can be transmitted as e-mail by attaching header information, such as destination e-mail address and the like,

image data in the e-mail format that was received via the internet back to image data in the facsimile format. The image data in the facsimile format converted by the mail controller 65 is decoded by the decoder 53 into image data that the printer 51 can output, and then is printed on a recording sheet. The LAN controller 67 is for controlling input and output of e-mail data between the LAN 2 and the internet facsimile device 1.

[ 0042]

According to the present embodiment, as shown in Fig. 3(B), the destination data storage area 45c of the RAM 45 stores destination data. The destination data includes names of receiving parties and corresponding facsimile numbers and e-mail addresses. That is, when a receiving party is capable of receiving a facsimile both via the public network 32 and the internet 31, both a facsimile number and an e-mail address can be stored under single name of the receiving party.

[ 0043]

As shown in Fig. 3(C), the title storage area 45d includes a default title area 45e and a user's area 45f. In the present embodiment, four default titles, that is, "You have a facsimile", "Facsimile: ASAP!", "Facsimile: please call", and "Facsimile: confidential", are pre-stored in the default title area 45e. On the other hand, a user can

register desired titles in the user's area 45f.

[ 0044]

Next, processes performed in the internet facsimile device 1 for transmitting and receiving a facsimile will be described.

[ 0045]

First, a destination data registration process will be described. This process is executed when required by a user through the operation panel 55. The outline of the destination data registration process is shown in the flowchart of Fig. 4. When the process begins, one-touch keys for a first destination to n-th destination are displayed on the LCD 57 (S10). It should be noted that if the LCD 57 is not large enough to display all of the one-touch keys at one time, the user can control to scroll up and down by operating scroll keys provided to the operation panel 55.

[ 0046]

The user selects and presses one of the one-touch keys (S20) that corresponds to destination data to input and displayed on the LCD 57. Then, the user enters a name or an appellation, such as a name of parson or company name, that identifies a receiving party in a section corresponding to the first destination to n-th destination of Fig. 3(B) (S30). Next, the user enters facsimile number and e-mail address of

a receiving party having the name or appellation (S40-S70).

[ 0047]

At this time, if the receiving party can receive a facsimile over a public network (S40:YES), the user inputs the facsimile number (S50). However, if the receiving party can not receive a facsimile over a public network (S40:NO), the process directly proceeds to S60 without executing the process of S50. Then, if the receiving party has an e-mail address (S60:YES), then the user enters the e-mail address (S70). If the receiving party does not have an e-mail address (S60:NO), the process skips S70. Note that the user has to input ① only a facsimile number, ② only an e-mail address, or ③ both a facsimile number and an e-mail address, in the processes of S40 to S70.

15 [ 0048]

After the destination data has been input, the LCD 57 displays the inputted data (S80). The user is prompted to indicate whether or not the displayed data should be registered (S90). If "YES", then, the inputted name and the like are registered to the one-touch key that was selected in S20 (S100). On the other hand, if "NO", then the process returns to S30, enabling the user to re-enter a name and other data.

[ 0049]

25 Next, a registration process for registering an e-mail

title which is attached to image data convened to an e-mail when transmitting a facsimile via the internet will be described. This process is constituted by the procedure shown in the flowchart of Fig. 5 and starts when a command to register an e-mail title is inputted through the operation panel 55. In this embodiment, the title storage area 45d stores some default titles as shown in Fig. 3(C). Therefore, titles registered during the title registration process are stored in the user's area 45f.

[ 0050]

When the process starts, first, the LCD 57 displays one-touch keys for the fifth to tenth titles secured as the user's area 45f, and contents registered to these one-touch keys as the current storage state (S110). In the state shown in Fig. 3(C), no title is registered to any of the one-touch keys. Therefore, in this case, one-touch keys for the comment 5 to comment 10 are displayed along with blank title areas.

[ 0051]

The user selects and presses one of the one-touch keys for comment 5 to comment 10 displayed on the LCD 57 to which the user are entering an e-mail title (S120). Next, the user inputs a desired comment as a title using the operation panel 55 (S130). When a comment has already been registered to the selected one-touch key (S140:YES), then,



the LCD 57 displays a message "Overwrite previous entry ?"  
(S150). If "YES", then, a comment inputted in S130 is  
registered in association with the selected one-touch key in  
place of the previously registered comment (S160). On the  
5 other hand, if "NO" is inputted in response to the comment  
"Overwrite previous entry ?", then the process returns to  
S120, allowing the user to reselect a different one-touch  
key.

[ 0052]

10 On the other hand, if no comment has been registered  
to the one-touch key which was selected in S120 (S140:NO),  
then the LCD 57 displays a message to inquire whether or not  
the user wishes registration (S170). If the user inputs  
"YES", then, the title is registered in S160. On the other  
15 hand, if the user inputs "NO", then the process returns to  
S130 to re-enter a title.

[ 0053]

Here, if the user wishes to delete a currently  
registered title, the user can press a return key in S130  
20 without inputting any comment so as to indicate to go to a  
next process. Then, the process proceeds to S140, S150. In  
S150, the user can input "YES".

[ 0054]

As described above, according to the device 1 of the  
25 present embodiment, titles that the user frequently uses can

be registered in the user's area 45f in association with one-touch keys (comment 5 - comment 10). Also, the titles can be changed by being overwritten, and also a new title can be added by inputting the title to a blank one-touch key.

5 When deleting a registered title from the user's area 45f, a delete key could be pressed after a one-touch key has been selected.

[ 0055]

Next, a facsimile transmission process will be described. This process is constituted of procedure shown in flowcharts of Figs. 6 and 7 and executed when a facsimile transmission was instructed through the operation panel 55.

[ 0056]

15 First, the LCD 57 displays a message inquiring the user whether the user wishes to specify a receiving party by directly inputting a destination or by using one-touch keys (S210). If the user selects to specify by using one-touch keys, then a list of names of receiving parties is displayed as one-touch keys for designating a destination based on the data stored in the destination data storage area 45c (S220), and the process waits for a next command (S230). The user specifies the destination from the list of the names of receiving parties by pressing one of the one-touch keys. At this time, if all of the one-touch keys are not displayed on the LCD 57 at the same time, the user can operate the scroll

20

25

keys provided to the operation panel 55 and the like so that a desired name can be displayed.

[ 0057]

When the destination was specified through the one-  
5 touch keys, the LCD 57 displays stored data of the destination (S240). At this time, if both a facsimile number and an e-mail address of the selected destination are stored, the LCD 57 displays the facsimile number and the e-mail address in this order. If both the facsimile number  
10 and the e-mail address are being stored (S250:YES), then the user is prompted to select either the facsimile number or the e-mail address (S260). If the user selects the facsimile number, then the user is directed to set an original document (S270). On the other hand, if the user  
15 selects the e-mail address, then the user is asked a title selection method for inputting a title that should be attached to facsimile data in the e-mail format to be transmitted (S310). If it is determined "NO" in S250, then it is determined which one of facsimile number and e-mail  
20 address is stored (S255). If it is facsimile number, then the process proceeds to S270. If it is e-mail address, then the process proceeds to S310.

[ 0058]

First, processes in S270 and on for when facsimile  
25 number was selected will be described. The scanner 47 reads

an image from the original document (S280). The encoder 49 encodes the image data read from the original document into G3 compressed image data (S290), which is then transmitted as a facsimile to the G3 facsimile device 21 via the modem 59, the circuit controller 61, and the public network 32.

[ 0059]

Next, processes in S310 and on for when an e-mail address has been selected will be described. As shown in Fig. 7, the user is asked a title selection method (S310). In the present embodiment, the user can select one of the following title selection methods: ① a method in which the user inputs a title directly through the operation panel 55 (direct input), ② a method in which the user selects a title from the titles stored in the title storage area 45d using a one-touch key (one-touch input), and ③ a method in which the user selects a default title, such as "You have a facsimile", stored in the top of the default title area 45e (fixed input).

[ 0060]

When the one-touch input method is selected, then the LCD 57 displays a list of the titles stored in the title storage area 45d along with respective one-touch keys (S320). The process waits until a one-touch key is selected (S330). The user specifies a title to be attached as an e-mail title from the list of the titles by pressing one of the one-touch

keys. At this time, if the entire list cannot be displayed on the LCD 57, the user can operate the scroll keys provided to the operation panel 55 and the like to display a desired title.

5 [ 0061]

If the user selects a desired title by pressing a one-touch key, then the user is instructed to set an original document (S340). The scanner 47 reads an image from the original document (S350). Image data read from the original document is encoded into G3 compressed image data by the encoder 49 (S360). The G3 compressed image data cannot be transmitted as an e-mail via the internet 31. Therefore, the G3 compressed image data is input to the mail controller 65 and converted into text coded image data that can be transmitted via the internet 31 (S370). Also, the mail controller 65 creates header information which includes the selected e-mail address, the selected e-mail title, data on the sending party, data necessary for outputting a message to a printer or a viewer on a receiving terminal, and the like (S380). The text coded image data attached with the header information is output to the LAN controller 67 and transmitted to the internet 31 via the LAN 2 and the network router 6 (S390).

[ 0062]

25 If the user selects the direct input method, the

process waits until a title is input through the operation panel 55 (S410). When a title has been input, the process proceeds to S340. If the user selects the fixed input method, then a default title, such as "You have a facsimile", which is registered in the top of the title storage area 45d is automatically selected (S420). Then, the process proceeds to S340.

[ 0063]

Next, the internet facsimile device 11 as the reception terminal will be described. As mentioned above, the internet facsimile device 11 as the reception terminal has the same structure as the internet facsimile device 1 as the transmission terminal. Therefore, only the control process will be described below.

[ 0064]

In the internet facsimile device 11, as shown in Fig. 8, it is checked periodically whether or not the mail server 15 provided to the LAN 12 at the reception terminal side has received any e-mail addressed to the internet facsimile device 11 (S510). If an e-mail data addressed to the internet facsimile device 11 has been received, then the e-mail is stored into the transmission/reception data storage area 45b provided in the RAM 45 of the device (S520). An e-mail title attached to the image data in the e-mail format and information of a sending party are stored as a receiving

report in a predetermined communication management data storage section within the transmission/reception data storage area 45b (S530). In the present embodiment, a facsimile received via the internet is not immediately  
5 printed. Instead, the facsimile remains stored in the transmission/reception data storage area 45b, and the process is kept in a standby state until a reception user requests to display a reception list through the operation panel 55 (S540).

10 [ 0065]

If the reception user requests to display the reception list through the operation panel 55, then the LCD 57 displays a list of e-mail titles and information of the sending parties (S550), and the process waits for an output  
15 command from the user (S560). The user selects one, that is needed to be printed, from the sending parties and e-mail titles displayed on the LCD 57, and inputs an output command. The user can input the output command by, for example, specifying one that should be outputted from the reception  
20 list by operating cursor keys provided to the operation panel 55 and then pressing an output key.

[ 0066]

When the data to be output was selected and the output command was input, corresponding image data is read from the  
25 transmission/reception data storage area 45b (S570). Then,

the mail controller 65 converts the image data to G3 compressed image data (S580), and the decoder 53 decodes the G3 compressed image data into image data in a format capable of being printed (S590). Then, the printer 51 is controlled to print the image data onto a recording sheet (S600).

[ 0067]

As described above, according to the present embodiment, a facsimile can be transmitted via either the internet or the public network. When a facsimile is transmitted via the internet, an e-mail title can be attached. Therefore, a receiving party can determine, from the e-mail title, whether or not the facsimile should be printed or should be read immediately. Also, the receiving party can delay printing of a less important facsimile, such as direct mail, until a later time, or leave such facsimile not to be printed out at all. Further, the sending party can specify an e-mail title either by selecting from previously recorded titles using one-touch key, or by specifying a default fixed title. Therefore, the title input process can be simplified. Moreover, by storing the sending party and the title that indicates an outline of facsimile contents as receiving information, the receiving party can output the receiving information as a communication management report at a later time. Therefore, facsimile communication can be managed more precisely



compared with in a normal G3 facsimile device. That is, by receiving a facsimile attached with a title, a receiving party can avoid unnecessary printing of a facsimile, and also can output an urgent facsimile more quickly. Moreover, when the user confirms record later, the user can manage the information much precisely than a conventional G3 facsimile device.

[ 0068]

Next, a second embodiment of the present invention will be described. In the second embodiment, the following process is executed when transmitting a facsimile from the internet facsimile device 1.

[ 0069]

Only a process of facsimile transmission via the internet will be described in the second embodiment. According to the second embodiment, a facsimile transmission process via the internet is composed of processes shown in the flowchart of Fig. 9 and started when a facsimile transmission was instructed through the operation panel 55.

[ 0070]

First, the user specifies an e-mail address of a receiving party by either in the direct input method or in the one-touch input method (S710). Next, the user is prompted to set an original document (S720), and the scanner 47 reads an image from the original document (S730). At

this time, enlarged character arrays on a first page of the original document are recognized (S740). Then, the character arrays are extracted as a title of the facsimile by an OCR function (S750). The image data read from the original document is encoded by the encoder 49 into G3 compressed image data (S760). The G3 compressed image data is converted by the mail controller 65 into text coded image data capable of being transmitted via the internet 31 (S770). The title which has been automatically extracted by the OCR function in S740 is also sent to the mail controller 65 and set as an e-mail title, and a header is created. The header includes the e-mail title, the specified e-mail address, data on the sending party, and data necessary for performing printing or displaying of the data in a viewer. After the header is attached to the text coded image data, data is sent to the LAN controller 67 and transmitted to the internet 31 via the LAN 2 and the network router 6 (S790).

[ 0071]

According to the above-described second embodiment, because a title is automatically extracted from an original document by the OCR function, a sending party does not need to input a title, thereby simplifying operations.

[ 0072]

Next, a third embodiment of the present invention will be described. In the third embodiment, when transmitting a

facsimile from the internet facsimile device 1, the following process is executed.

[ 0073]

In the third embodiment also, only process for facsimile transmission via the internet will be described. The facsimile transmission via the internet is composed of procedure shown in flowchart of Fig. 10 and is started when facsimile transmission was instructed through the operation panel 55.

[ 0074]

First, the user specifies an e-mail address of a receiving party in the direct input method or the one-touch input method (S810). Next, the user is prompted to set an original document (S820), and the scanner 47 reads an image from the original document (S830). Then, the image data read from the original document is encoded by the encoder 49 into G3 compressed image data (S840). Then, the G3 compressed image data is sent to the mail controller 65 and converted into text coded image data that can be sent to the internet 31 (S850). Next, the user inputs a title to be attached to the facsimile (S860). The user can input a title in the direct input method or the one-touch input method in the same manner as in the first embodiment. If the user inputs a title in response to the prompt to input a title (S870:INPUT), the inputted title is transmitted to the

mail controller 65 and set as an e-mail title, and a header is generated (S880). The header includes the e-mail title, the specified e-mail address, data on the sending party, data necessary for printing or displaying data at a receiving terminal, and the like. On the other hand, if the user does not input a title (S870:IGNORED), then first one of the default titles stored in the default title area 45e is forcefully set as a title (S875). Then, the process proceeds to S880, wherein the forcefully-set title is entered in the header. Lastly, the text coded image data attached with the header is sent to the LAN controller 67 and transmitted to the internet 31 via the LAN 2 and the network router 6 (S890).

[ 0075]

As described above, according to the third embodiment, a predetermined one of the registered default titles is automatically attached when the user ignores to input a title. Therefore, a facsimile is never transmitted via the internet without a title. Therefore, a receiving party can obtain information of any kind, thereby preventing the receiving party from overlooking an important facsimile.

[ 0076]

Next, the other control processing of the internet facsimile device 11 at the reception party side according to a fourth embodiment of the present invention will be

described.

[ 0077]

As shown in Fig. 11, in the internet facsimile device 11 according to the fourth embodiment, it is periodically determined whether or not the mail server 15 provided to the LAN 12 at the receiving party side has received any e-mail data addressed to the internet facsimile device 11 (S910). If an e-mail data has been received, then the e-mail data is stored in the transmission/reception data storage area 45b provided in the RAM 45 of the device (S920). Then, an e-mail title attached to image data in the e-mail format and information of a sending party are stored as a receiving report in a predetermined communication management data storage section of the transmission/reception data storage area 45b (S930). Next, the e-mail title is checked against urgency judgment data which is pre-stored in the ROM 43 (S940), and it is determined whether or not the facsimile should be immediately printed (S950). For example, it is determined whether or not the title includes such character arrays as "immediately", "important," "urgent", or "please respond". Then, it is determined that immediate printout is necessary if any of the character strings is included.

[ 0078]

If, as a result of the comparison and determination, it is determined that the facsimile should be immediately

printed and read (S950:YES), the process notifies a user at the receiving side that the facsimile should be outputted immediately by a beep or the like (S960). On the other hand, if it is determined that it is not necessary to output immediately, then, as in the first embodiment, the facsimile received via the internet is kept in the transmission/reception data storage area 45b, and the process is kept in a standby state until the user at the receiving side requests to display a reception list through the operation panel 55 (S970).

[ 0079]

The processes of S970 and on are similar to that of the first embodiment. However, when the user is notified of the arrival of an urgent facsimile in S960, the user inputs a command to display the receiving report (S970:YES). Then the LCD 57 displays a list of e-mail titles and information on the sending parties (S980). At this time, the title of e-mail formed facsimile which was set as the object of notification in S960 is displayed in a different color from other titles or made to flash so that the receiving party can easily distinguish a facsimile which was set as the object of notification (S990). If the user inputs an output command (S1000:YES), then a corresponding image data is read from the transmission/reception data storage area 45b (S1010), and converted into G3 compressed image data by the

mail controller 65 (S1020). The G3 compressed image data is decoded by the decoder 53 into data format that can be printed (S1030). Then, the printer 51 prints the image data on a recording sheet (S1040).

5 [ 0080]

According to the fourth embodiment described above, when an urgent facsimile is received via the internet, the urgency is notified to a receiving party. Therefore, the user can immediately print the facsimile. In this way, urgent communication can be effectively performed. Further, by changing the display format of a title corresponding to an urgent facsimile, a user can easily recognize the urgent facsimile even when a plurality of facsimile has been received.

15 [ 0081]

Next, other control processing executed by the internet facsimile device 11 as the reception party according to a fifth embodiment of the present invention will be described.

20 [ 0082]

In the internet facsimile device 11 according to the fifth embodiment, as shown in Fig. 12, it is periodically determined whether or not the mail server 15 provided to the LAN 12 at the receiving party side has received any e-mail addressed to the internet facsimile device 11 (S1110). If

an e-mail has been received, then the e-mail is stored in the transmission/reception data storage area 45b provided in the RAM 45 of the device (S1120). Then, an e-mail title attached to image data in the e-mail format and information of a sending party are stored as a receiving report in a predetermined communication management data storage section of the transmission/reception data storage area 45b (S1130). Next, the e-mail title is checked against urgency judgment data (S1140) which is pre-stored in the ROM 43, and it is determined whether or not the facsimile is to be immediately printed (S1150). For example, it is determined whether or not the title includes such character arrays as "immediately", "important," "urgent", or "please respond". Then, it is determined that immediate output is necessary if any of the character strings is included.

[ 0083]

If, as a result of the comparison and determination, it is determined that the facsimile should be immediately printed and read (S1150:YES), the process notifies a user at the receiving side that the facsimile should be outputted immediately by a beep or the like (S1160). Corresponding image data is read immediately without waiting for an output command (S1170) and converted into G3 compressed image data by the mail controller 65 (S1180). The G3 compressed image data is decoded by the decoder 53 into data format that can



be printed (S1190). Then, the printer 51 prints the image data on a recording sheet (S1200).

[ 0084]

On the other hand, if it is determined that it is not necessary to output immediately (S1150:NO), the process waits until a list is requested to be displayed (S1210). If requested, the list is displayed (S1220). When output is instructed (S1230:YES), then, the process proceeds to S1170 to perform the printing.

[ 0085]

According to the fifth embodiment described above, when an urgent facsimile is received via the internet, a receiving party is notified of the urgency, and the facsimile is automatically printed. Thus, a user can more easily and reliably respond to an urgent information than the forth embodiment.

[ 0086]

Next, a process executed by the reception party according to a sixth embodiment of the present invention will be described. The process executed by the reception party according to the sixth embodiment is executed by not the internet facsimile device 11, but the PC 13 connected to the LAN 12 at the receiving side. Moreover, in the sixth embodiment, it is assumed that a facsimile was transmitted via the internet as an e-mail not for the internet facsimile

device 11, but for an individual.

[ 0087]

5 In the sixth embodiment, as shown in Fig. 13, the PC 13 at the receiving side periodically checks whether or not the mail server 15 has received a facsimile addressed to the individual who is using the PC 13 (S1310). For this purpose, the user of the PC 13 has to previously register a personal e-mail address on the PC 13. The PC 13 checks for an incoming facsimile on the mail server 15 according to the registered e-mail address.

[ 0088]

15 If it was determined that a new e-mail has been received (S1310:YES), then the e-mail is displayed as a mail list on a display of the PC 13 (S1320). As described above, since an e-mail title is attached to facsimile data converted to the e-mail format, the user of the PC 13 can be notified that a new facsimile has been received by examining the mail list. Moreover, since the user can know the general contents of the facsimile from the title, the user can easily determine whether the facsimile should be immediately printed or displayed in the display of the PC 13 using a viewer function.

[ 0089]

25 Therefore, in the process at the PC 13 as the reception party, the process waits until instructed to

output the e-mail after displaying the mail list on the display (S1330). If the user input an output command (S1330:YES), the process prompts the user to select whether to output the data to a printer or to display on the display by the viewer function (S1340). If the user selects to print, the corresponding data is read from the mail server 15 (S1350). Next, the data is converted to data capable of being printed (S1360). Then, the data is transmitted to the printer 14, and a printing process is executed (S1370). On the other hand, if the user selects the viewer function, the corresponding data is read from the mail server 15 (S1380) and converted to data capable of being displayed by the viewer function (S1390). The data is displayed on the display (S1400). Therefore, if required, the data can be sent to the printer 14 and printed as a hardcopy using a hardcopy function (S1410, S1420).

[ 0090]

According to the sixth embodiment, a facsimile can be sent via the internet as an e-mail for an individual. Also, an e-mail recipient party can determine whether to output the facsimile or not by displaying a title as an e-mail list. Therefore, important information can be distinguished from such information as Direct mail and the like and outputted or displayed on a display.

[ 0091]

While the invention has been described in detail with reference to specific embodiments thereof, the invention is not only limited those embodiments, but adopt same of embodiments for a range which does not deviate from a summary, of course.

[ 0092]

For example, in stead of the system shown in Fig. 1, a system in which the internet facsimile device 1 and the internet facsimile device 11 are connected to the providers 71 and 72, respectively, via the public networks, and perform facsimile transmissions and receptions over the internet 31 via the providers 71, 72 as shown in Fig. 14 can be used.

[ 0093]

Further, a title input method in which a title is input by reading a bar code associated with a title from a bar code list can be used rather than the one-touch key input method. Further, rather than by performing an enlarged character recognition, a title can be automatically set in other condition. For example, it is possible to set an underlined character array as a title or to set a character array surrounded with a frame as a title.

[ 0094]

Further, when transmitting a facsimile via the internet in the embodiments described above, image data read

by the scanner 47 is first converted to image data in the G3 compressed facsimile format and then into e-mail format by the mail controller 65. However, the image data read by the scanner 47 can be converted directly into image data in the e-mail format. Further, when a facsimile is received via the internet, the image data in the e-mail format can be directly converted to a format that can be printed by the printer 51 without converting the data back to the facsimile format. In this case, a device including a G3 facsimile unit and an internet facsimile unit connected in parallel in a single unit can be provided with a title inputting function of the present invention. Here, the G3 facsimile unit converts image data read by the scanner into G3 compressed image data in the facsimile format, transmits the facsimile via the public network, and prints an image based on the G3 compressed image data received via the public network. The internet facsimile unit converts image data read by the scanner directly into image data in the e-mail format, transmits the image data in the e-mail format via the internet, directly converts image data in the e-mail format into image data capable of being printed without converting image data in the e-mail format back into facsimile format, and prints the image data.

[ 0095]

[ Effects of the Invention]

According to the internet facsimile device of the present invention, when a facsimile is received via the internet, the receiving party side can determine the contents and urgency of an outline of the facsimile and the like. As a result, the receiving party side can determine whether or not the received facsimile needs to be checked immediately, and whether or not the received facsimile is a mere direct mail and the like. Therefore, a user can organize received information efficiently.

[ 0096]

The internet facsimile device according to claim 1 has the most fundamental configuration on showing the above effects and can achieve the above effects by inputting a title when a facsimile is transmitted via the internet.

[ 0097]

Also, the device according to claim 2 has the most fundamental configuration on showing the above effects as well and can perform facsimile transmission/reception not only via the internet but also over the public network. It can show an effect that information is reliably transmitted to the receiving party side and that was unthinkable in facsimile transmission over the public network, by inputting a title when the facsimile transmission/reception is performed via the internet.

[ 0098]

In the device according to claim 3, a first process on image data that was read by the original document reading means is the same both when the data was received via the public network and when received over the internet, and data stored in a RAM as image data in the facsimile format is read and converted into image data in the facsimile format when a facsimile transmission was switched to transmission via the public network because the public network was busy. Therefore, it is unnecessary to read an original document again.

[ 0099]

The device according to claim 4 includes the title inputting means. Therefore, a user is prompted to input a title before a facsimile is transmitted via the internet, and it can prevent the function of the present invention from being wasted.

[ 0100]

The device according to claim 5 enables to input a title by selecting from pre-registered titles, and can simplify operations by a user using the device of the present invention.

[ 0101]

The device according to claim 6 includes the title editing means that adds, edits, and deletes a title. Therefore, the device of claim 4 can be made to meet needs

of the users much more. Therefore, a facsimile transmission/reception that meets the needs of the user using the device of the present invention can be realized.

[ 0102]

5           The device according to claim 7 performs a facsimile transmission with pre-registered default title being appended when the user who performs a facsimile transmission via the internet using the device in present invention forgets to input a title or ignores instruction to input a  
10 title. Therefore, a comment based on which a user determines the contents of the facsimile can be reliably attached, which is the most essential effect of the present invention, thereby preventing the function of the device in the present invention from being wasted.

15 [ 0103]

          According to the device of claim 8, a title is automatically set, thereby achieving the function of the device of the present invention, and the burden of the operation on the user using the device of the present  
20 invention can be minimized.

[ 0104]

          The device according to claim 9 includes a function to display a title appended to a received facsimile as a list when a facsimile is received via the internet. Therefore,  
25 the receiving party side can determine the contents of



outline of the received facsimile and whether or not to  
output immediately. As a result, when the urgent facsimile  
is received, a user can output immediately and check the  
contents, and the receiving party side can distinguish  
5 important information from such information as direct mail.

[ 0105]

The device according to claim 10 can receive a  
facsimile not only via the internet but also over the public  
network, and the facsimile outputting means can be used in  
10 common for facsimile data received over the public network  
and for facsimile data received via the internet.

[ 0106]

The device according to claim 11 has a construction  
that determines and notifies a user of the priority of the  
15 facsimile as to whether or not to output based on the title  
attached to the facsimile received via the internet, and the  
receiving party side is notified reliably that urgent  
facsimile was received. Therefore, communication in an  
urgent can be prevented from being ignored.

20 [ 0107]

According to the device of claim 12, when urgent  
facsimile is received, it is automatically determined from  
the title attached to the facsimile and printed by priority.  
Therefore, it can prevent an urgent facsimile from being not  
25 printed.

[ 0108]

According to the device of claim 13, the receiving party side can be notified of a facsimile information that was determined to be in an urgent or to have high priority and that was outputted. Therefore, it is possible to prevent information that was output by priority from not being read until much later.

[ BRIEF DESCRIPTION OF THE DRAWINGS]

[ Fig. 1] A block diagram showing an overall configuration of an internet facsimile system according to embodiments of the present invention.

[ Fig. 2] A block diagram showing an overall configuration of an internet facsimile device according to the embodiments of the present invention.

[ Fig. 3] An explanatory diagram showing main contents of a RAM according to the embodiments of the present invention.

[ Fig. 4] A flowchart representing a destination data registration routine executed in the embodiments of the present invention.

[ Fig. 5] A flowchart representing a title registration routine according to the embodiment of the present invention.

[ Fig. 6] A flowchart representing a facsimile transmission routine according to a first embodiment of the present invention.

[ Fig. 7] A flowchart representing the facsimile transmission routine according to the first embodiment of the present invention.

[ Fig. 8] A flowchart representing a facsimile receiving routine according to the first embodiment.

[ Fig. 9] A flowchart representing a facsimile transmission routine according to a second embodiment of the present invention.

[ Fig. 10] A flowchart representing a facsimile transmission routine according to a third embodiment of the present invention.

[ Fig. 11] A flowchart representing a facsimile receiving routine according to a fourth embodiment of the present invention.

[ Fig. 12] A flowchart representing a facsimile receiving routine according to a fifth embodiment of the present invention.

[ Fig. 13] A flowchart representing a routine executed by a PC at a receiving side according to a sixth embodiment of the present invention.

[ Fig. 14] A block diagram showing a facsimile communication system according to a modification of the embodiments.

[ Description of Numberings]

1,11...internt facsimile device; 2,12...local area network

(LAN); 3,13...personal computer(PC); 4,14...printer; 5,15...  
mail server; 6,16...network router; 21...G3 facsimile device;  
31...internet; 32...public network; 41...CPU; 43...ROM; 45...  
RAM; 45a...work memory; 45b...transmission/reception data  
5 storage area; 45c...destination data storage area; 45d...  
title recording area; 45e...default title area; 45f...user's  
area; 47...scanner; 49...encoder; 51...printer; 53...decoder;  
55...operation panel; 57...LCD; 59...modem; 61...circuit  
controller; 63...PC interface; 65...mail controller; 67...LAN  
10 controller; 71,72...provider.

[ Document Name] Abstract

[ Abstract]

[ Object] To enable a receiving party side to determine  
a content of outline and urgency of a facsimile in an  
5 internet facsimile device.

[ Configuration] When an electronic mail address is  
specified as a destination, a title to be attached to  
facsimile data in an e-mail format that will be transmitted  
is inputted or set (S310-S330,S410,S420) . After an original  
10 document was read, data is encoded to G3 compressed image  
data, and is converted to text coded image data which can be  
transmitted to an internet as an electronic mail. A header  
including an electronic mail address, an electronic mail  
title, data on transmitting party, and information required  
15 to output or display by a viewer at a receiving party side,  
and the like is created. Then, the text coded image data  
attached with the header is transmitted to the internet via  
a LAN and a network router (S340-S390) .

[ Selected Drawing] Fig.7

Fig. 1

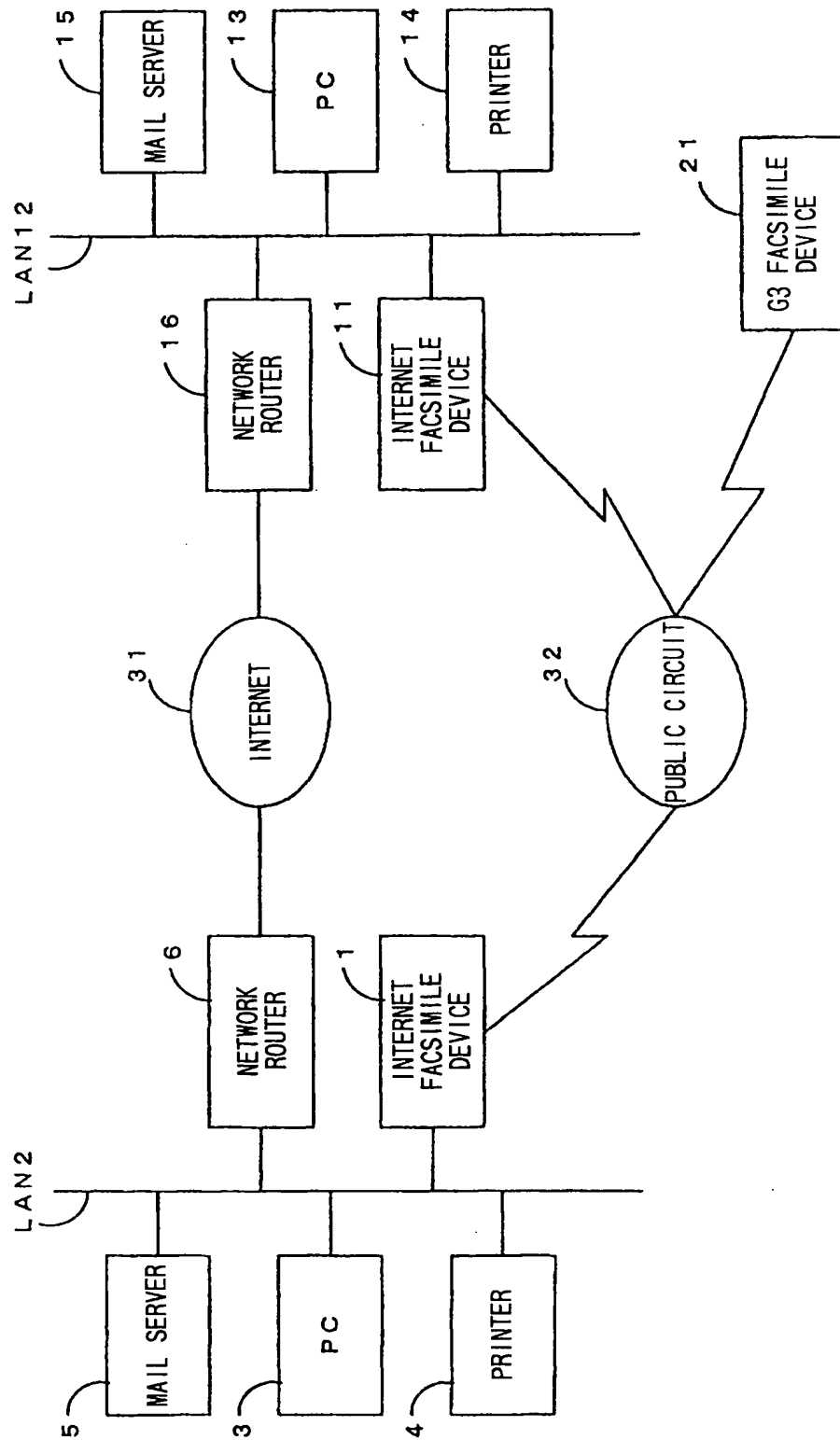


Fig. 2

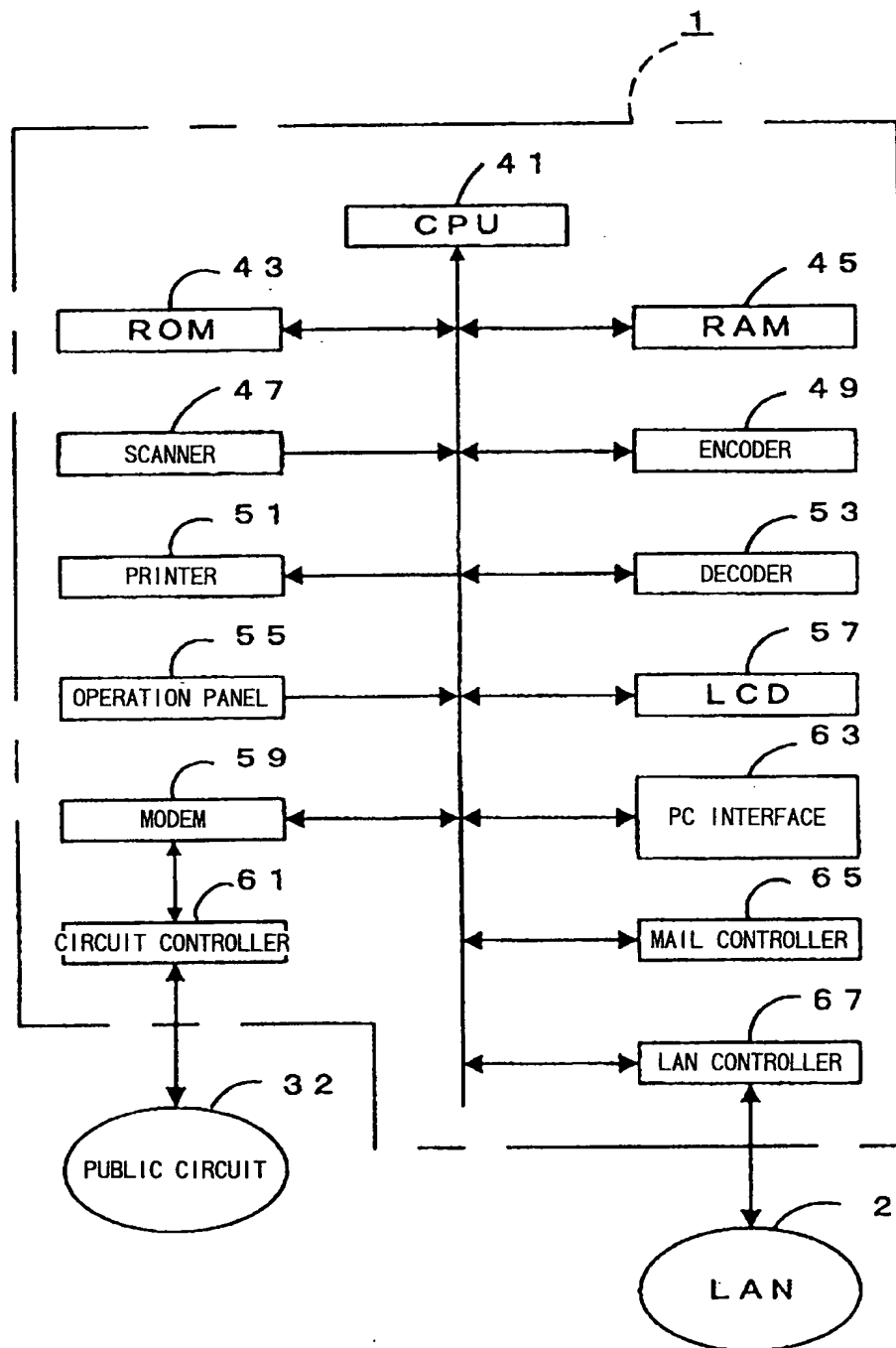
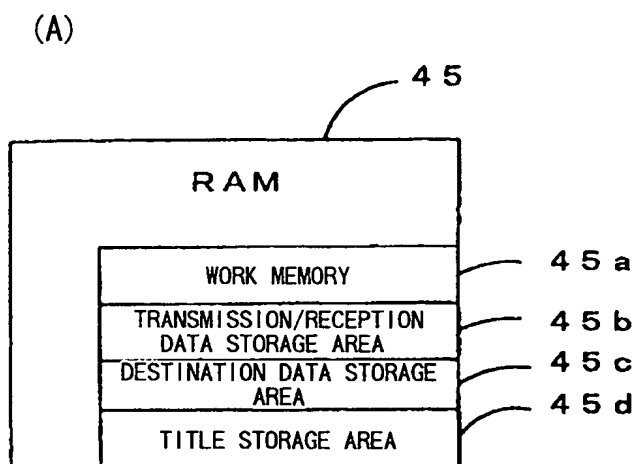


Fig. 3



(B)

45 c

NAME 1	03-****-****
	aaa@***.co.jp
NAME 2	06-****-****
	bbb@***.co.jp
NAME 3	052-****-****
NAME 4	0564-**-****
	ccc@***.or.jp
NAME 5	0532-**-****
	ddd@***.ne.jp
NAME 6	0775-**-****
	eee@***.ne.jp
.	.
.	.
.	.
.	.
NAME n	TELEHPONE NUMBER n
	E-MAIL ADDRESS n

(C)

45 e

45 d

45 f

COMMENT 1	YOU HAVE A FAX.
COMMENT 2	FAX: ASAP
COMMENT 3	FAX: PLEASE CALL
COMMENT 4	FAX: CONFIDENTIAL
COMMENT 5	
COMMENT 6	
COMMENT 7	
COMMENT 8	
COMMENT 9	
COMMENT 10	



Fig. 4

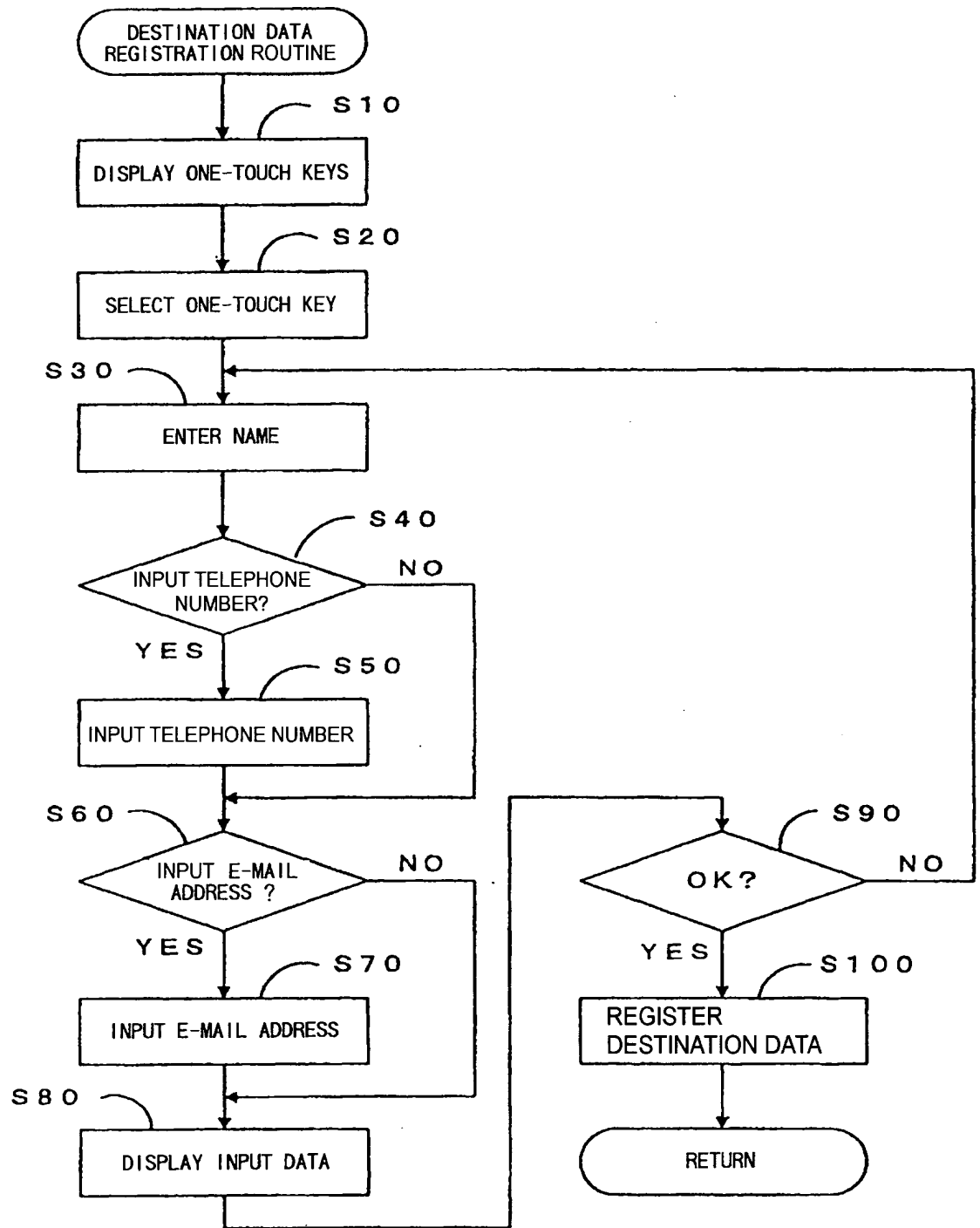




Fig. 5

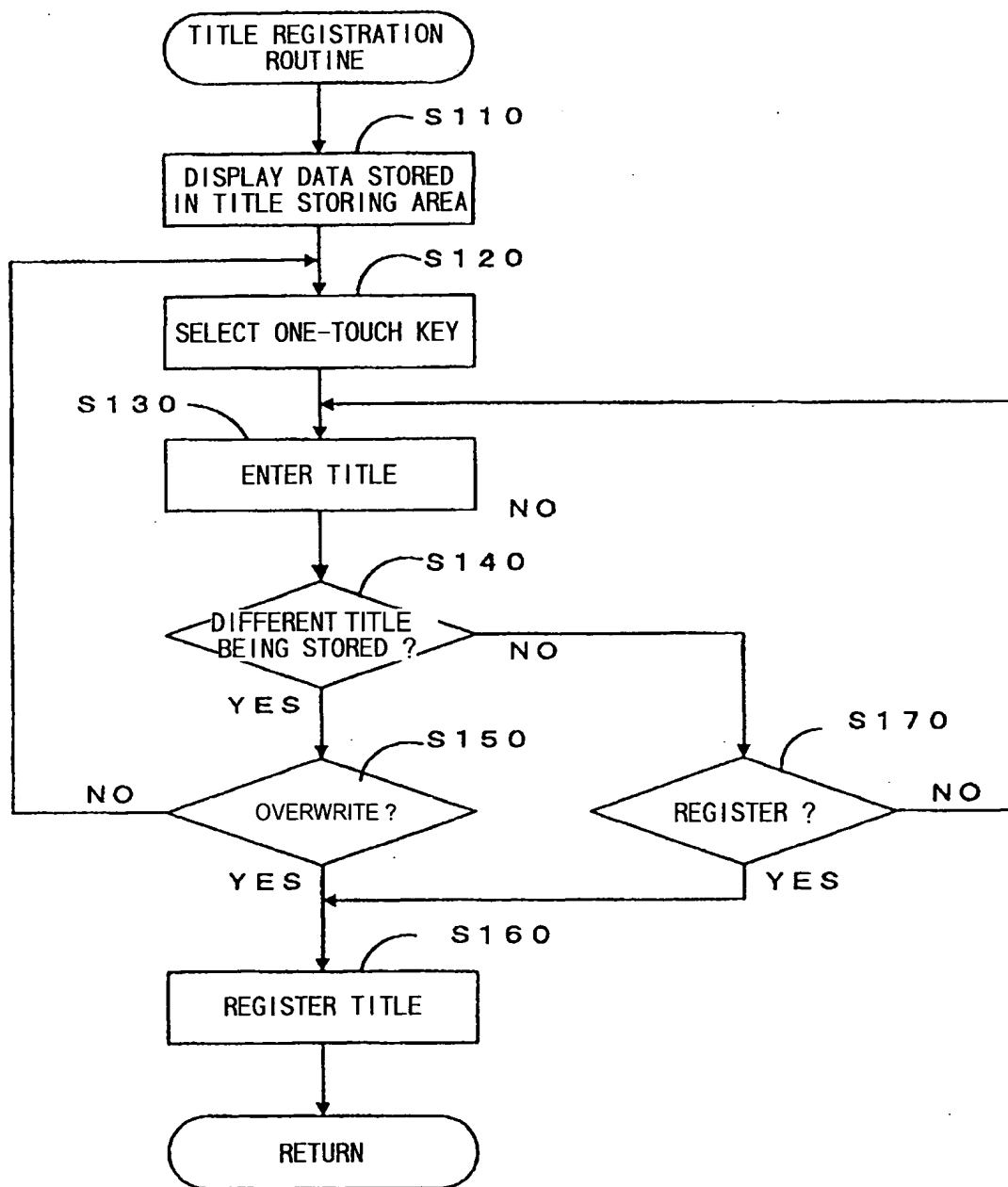


Fig. 6

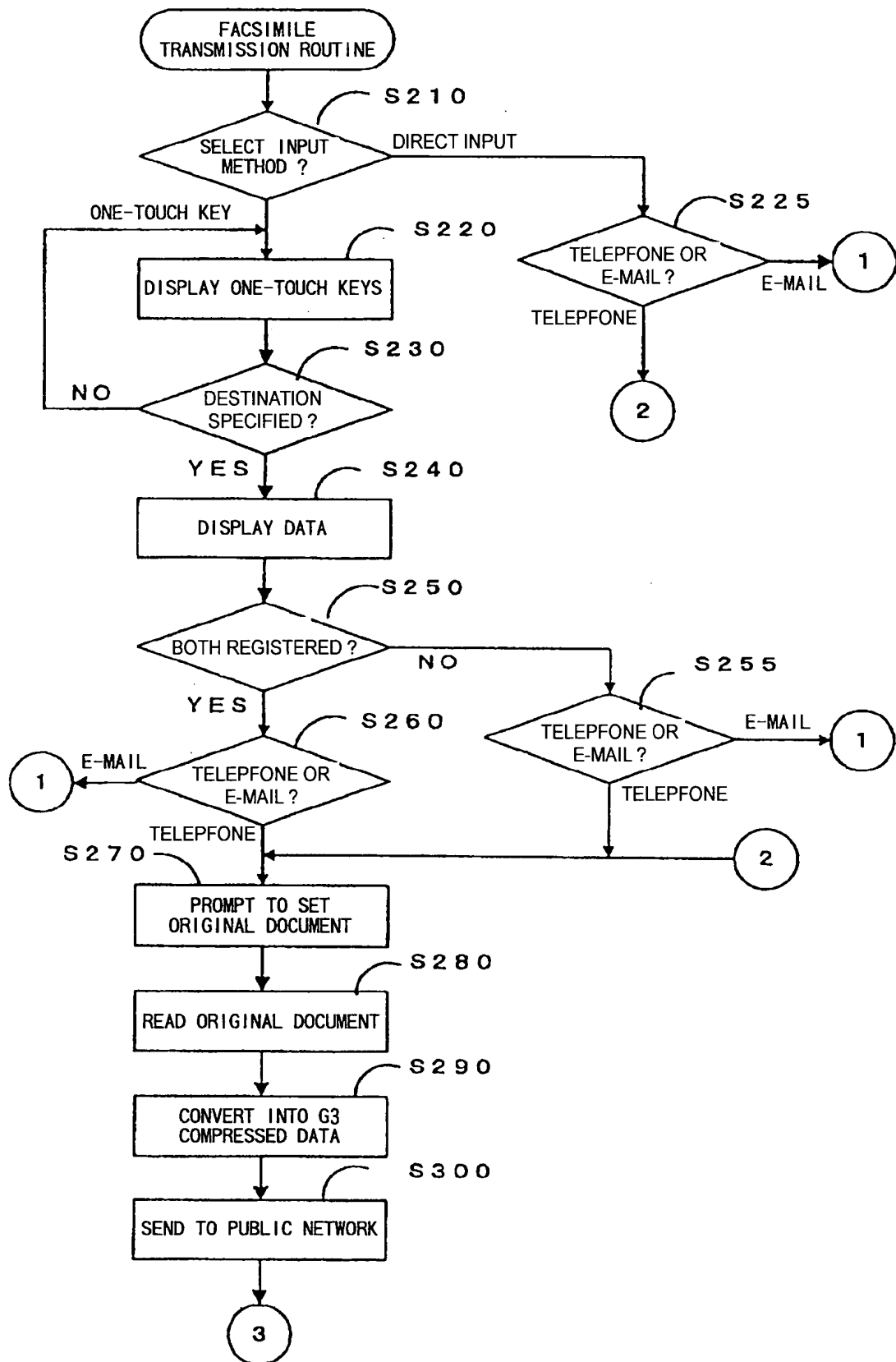


Fig. 7

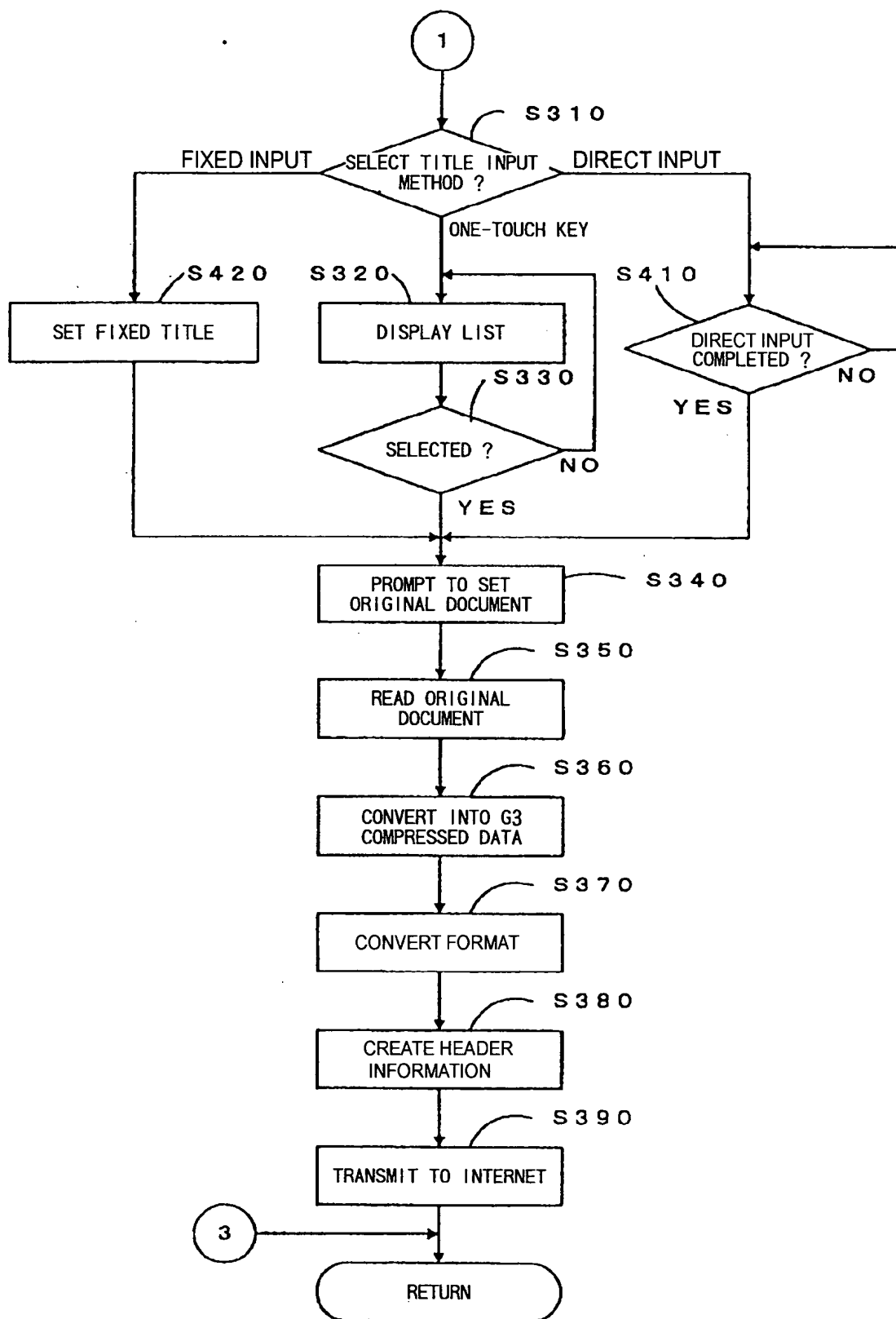


Fig. 8

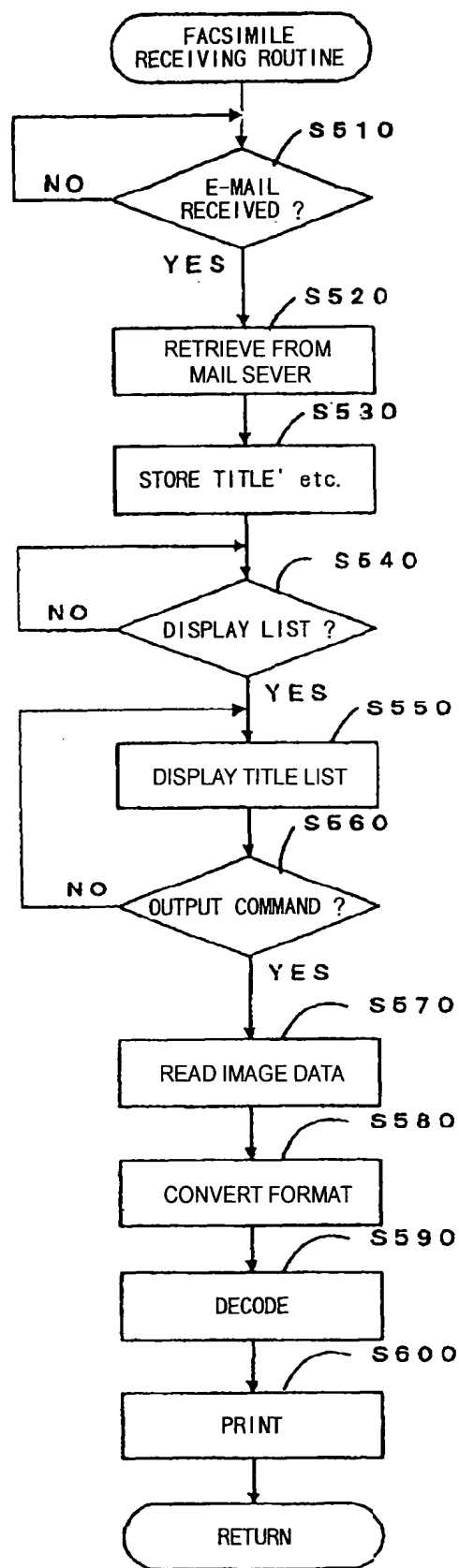




Fig. 9

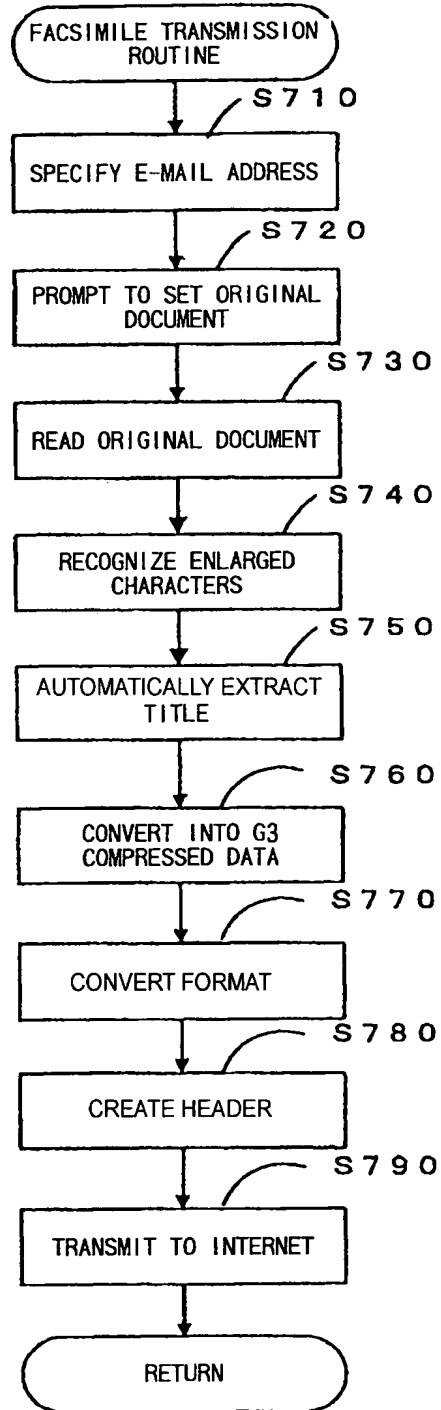


Fig. 10

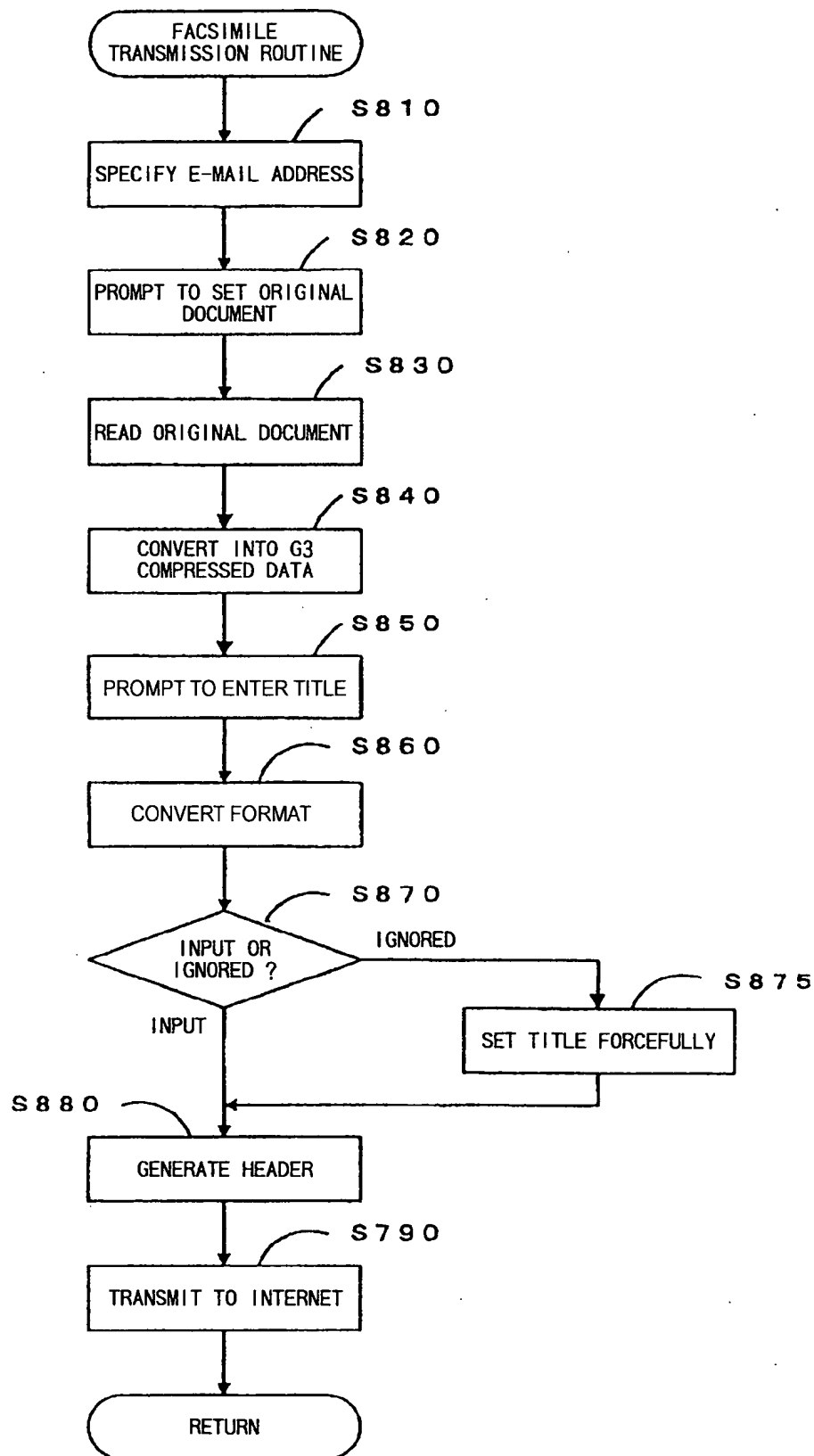


Fig. 11

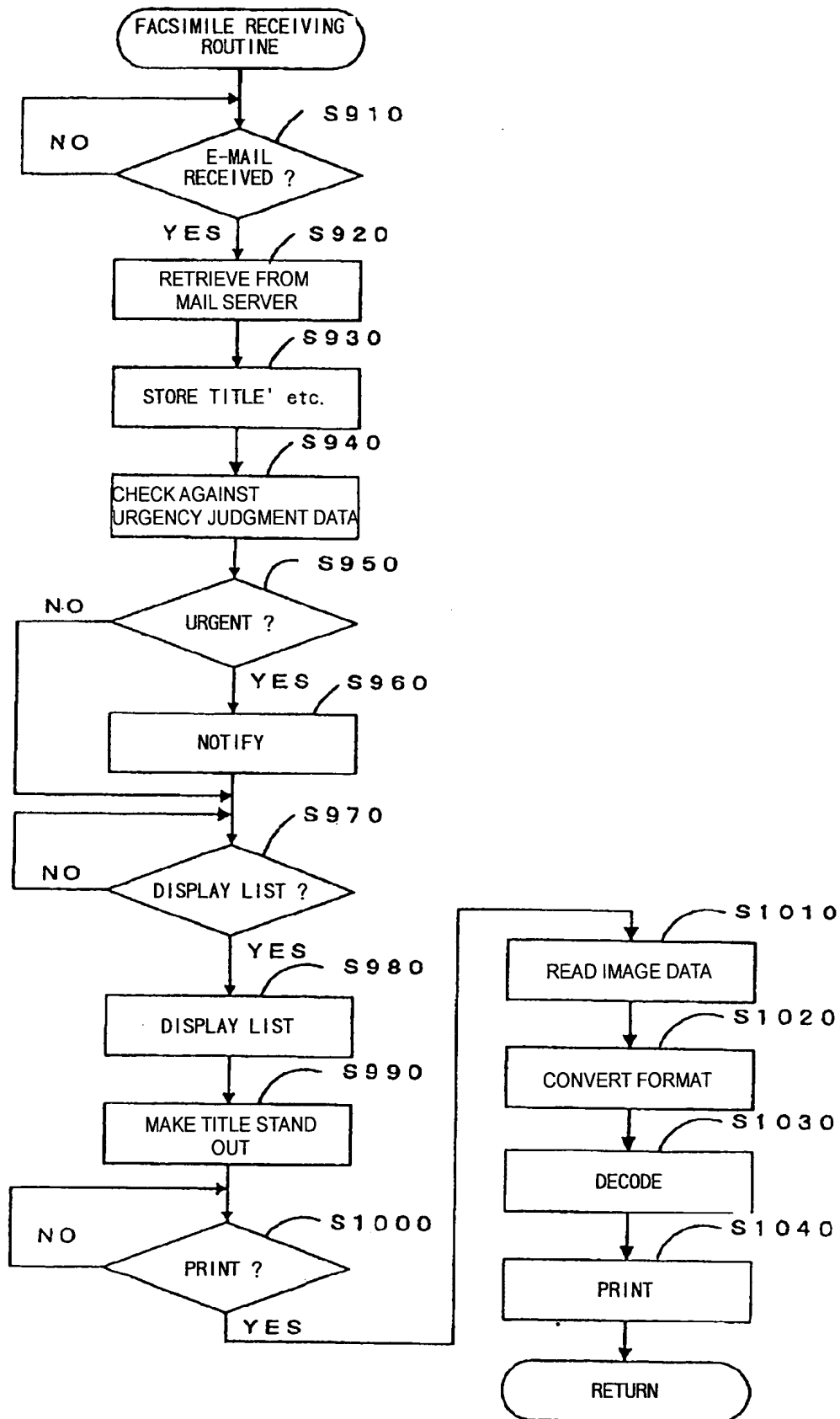




Fig. 12

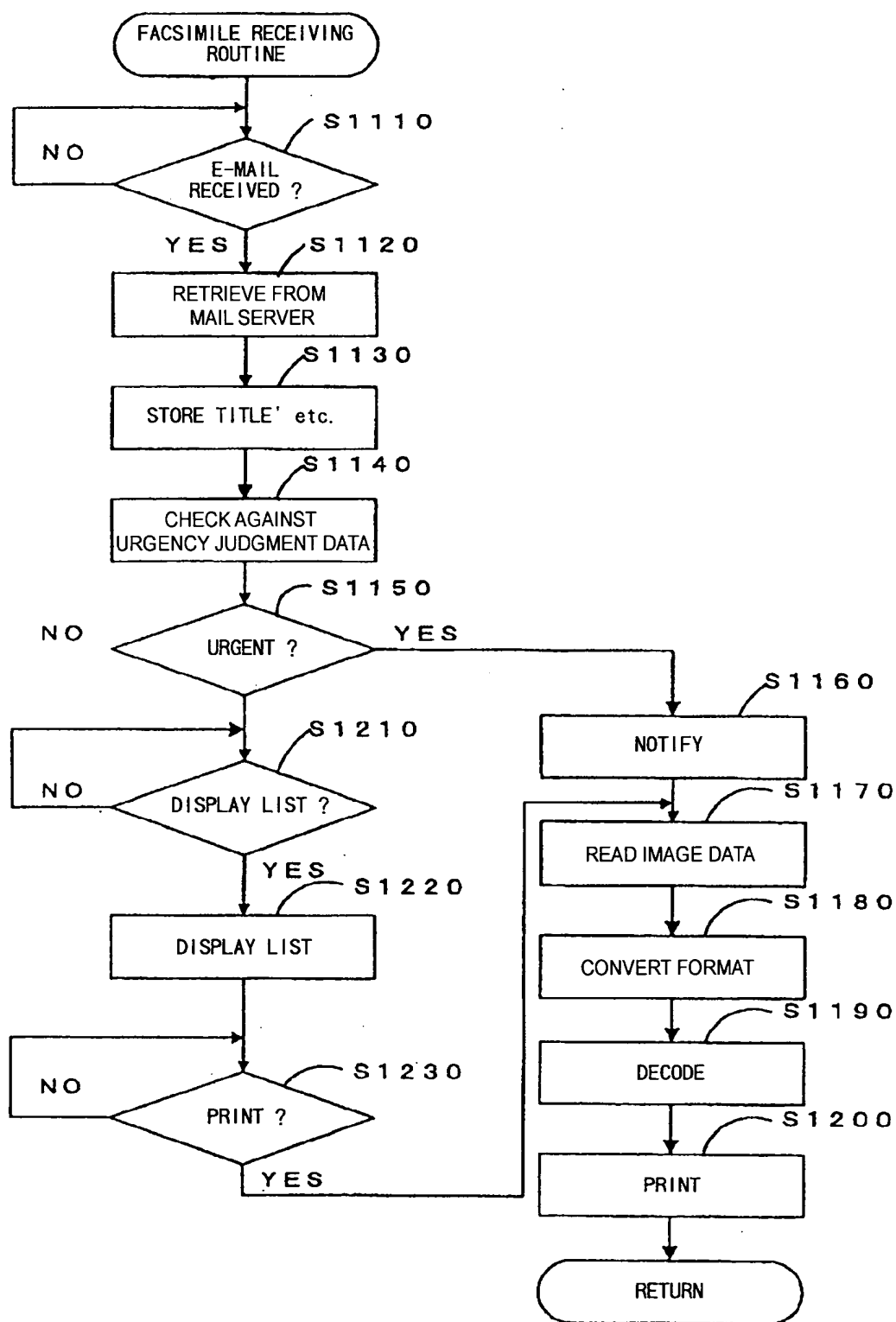


Fig. 13

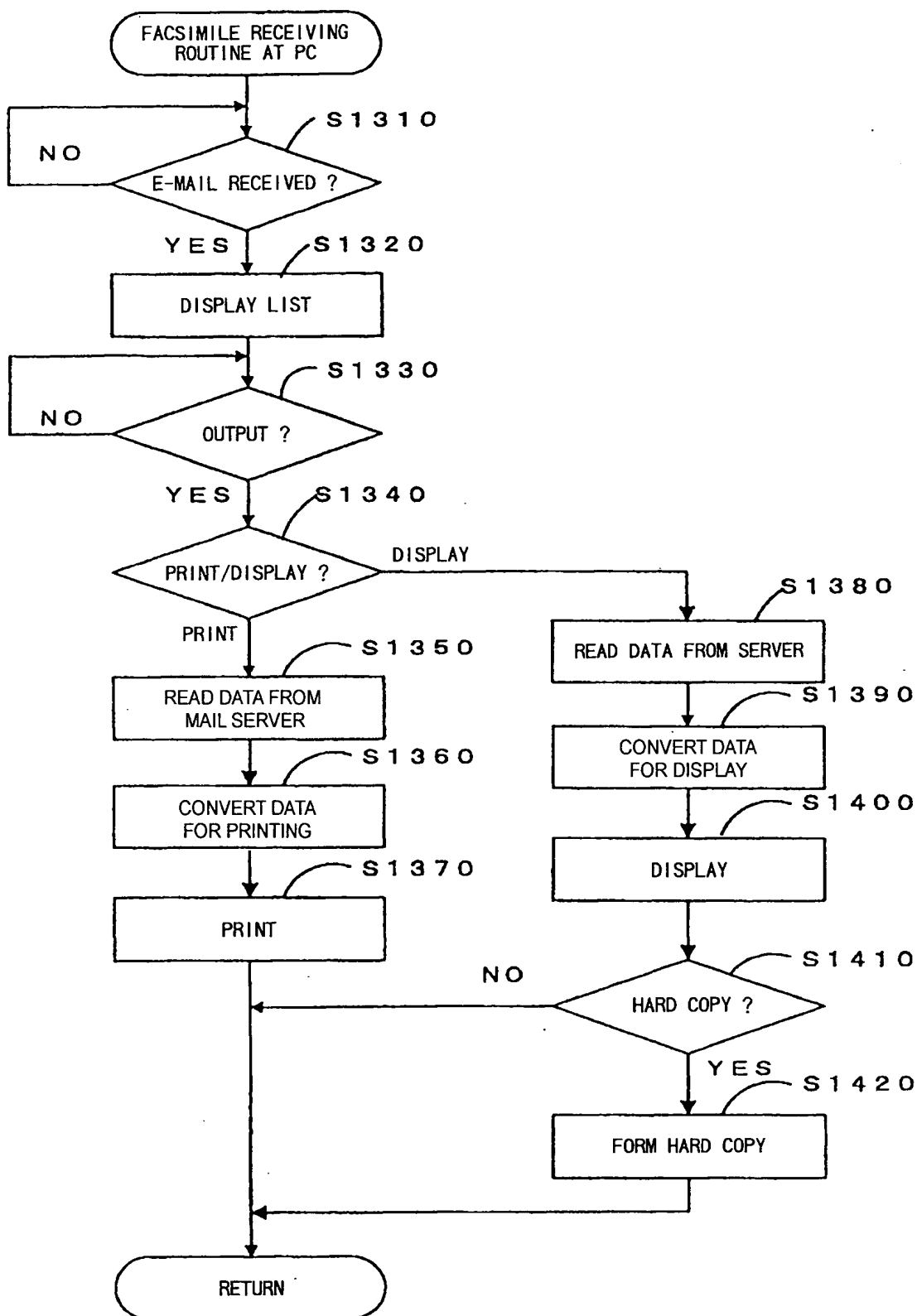




Fig. 14

